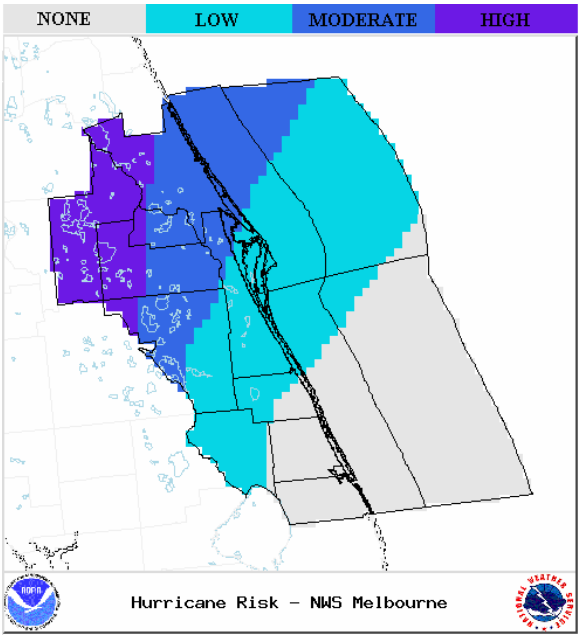
Experimental

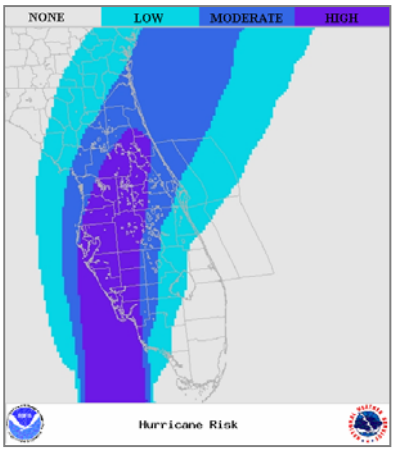
Tropical Cyclone Wind Risk Products



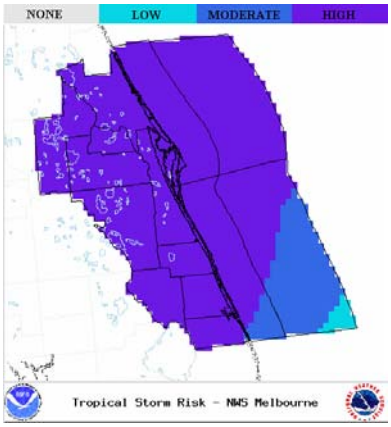
Description: Issued by the local Weather Forecast Office (WFO) during tropical cyclone situations, the ***Tropical Cyclone Wind Risk*** product suite consists of three maps that categorically depict the risk of tropical storm-force winds (≥ 39 mph; 34 knot), strong tropical storm-force winds (≥ 58 mph; 50 knot), and hurricane-force winds (≥ 74 mph; 64 knot). Each map within the suite is based on respective tropical cyclone wind probabilities (cumulative) as provided by the Tropical Prediction Center upon the issuance of each tropical cyclone advisory. Importantly, the probabilities not only consider the official forecast, but also take into account inherent forecast uncertainties in track, intensity, and size of the particular tropical cyclone. As the local area becomes threatened, and Watches or Warnings are issued, wind risk maps are created on the local scale for user convenience. Each map denotes locations subject to low, moderate, and high wind risk according to the indicated wind speed and is valid throughout the event period (up to 120 hours). Optimal probability thresholds are used to define each risk category as derived from historical cases. Updates are provided shortly after each advisory and are continued until tropical cyclone winds are no longer an immediate threat to local communities.

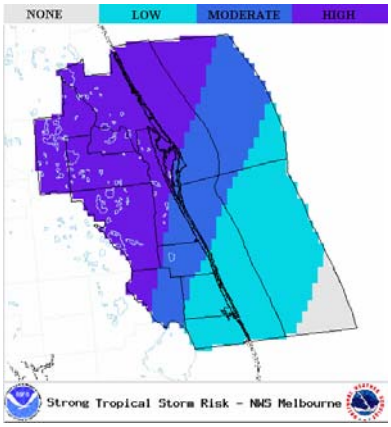
Utility: The ***Tropical Cyclone Wind Risk*** product suite uses categories of risk (Low, Moderate, and High) to simplify complicated numeric probabilities for certain critical wind speeds. They are easy-to-understand and, for less-sophisticated users, offer a friendly alternative by design. Unlike the larger-scale probability maps, the wind risk maps are location-centric and available only when tropical cyclone Watches or Warnings are locally in effect. Collectively or individually, the maps may be used to assess the risk of experiencing tropical storm-force, strong tropical storm-force, or hurricane-force winds, according to specific user sensitivities. Users should note, however, that local wind enhancements (e.g., for higher altitude terrain, etc.) are not considered. The wind risk maps offer complementary decision-making information to the wind forecasts by expressing the associated uncertainty according to traditional wind speed thresholds. In gridded (and shape file) form, these can be ingested into Geographic Information Systems to address specific vulnerabilities, in context of the actual meteorological situation, for a more detailed assessment of the potential wind impact.

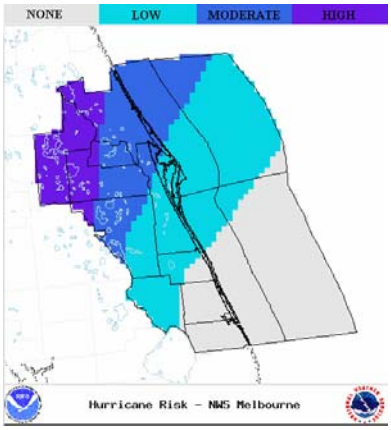
For Example: County officials might investigate the ***Tropical Cyclone Wind Risk*** product suite to determine the extent to which additional sheltering may be needed in order to accommodate those needing a safe place to take cover from the wind (in addition to those seeking refuge from anticipated surge waters). Responsible decisions can also be made regarding the potential closing of bridges and causeways, the shutting down of airports, the rerouting of land and marine traffic, the evacuation of hospitals and nursing homes, the canceling of schools and colleges, and the rallying of emergency response and recovery resources. Since the risk graphics complement the official wind forecast, conflicting information is minimized.



Hazard – Tropical Cyclone Wind







Tropical Storm Wind Risk	Strong Tropical Storm Wind Risk	Hurricane Wind Risk
High Wind Risk…based on the current wind speed forecast and inherent forecast uncertainties, there is a high risk of tropical storm-force winds associated with the event. A high risk of winds ≥ 39 mph (34 knots).	**High Wind Risk…**based on the current wind speed forecast and inherent forecast uncertainties, there is a high risk of strong tropical storm-force winds associated with the event. A high risk of winds ≥ 58 mph (50 knots).	**High Wind Risk…**based on the current wind speed forecast and inherent forecast uncertainties, there is a high risk of hurricane-force winds associated with the event. A high risk of winds ≥ 74 mph (64 knots).
Moderate Wind Risk…based on the current wind speed forecast and inherent forecast uncertainties, there is a moderate risk of tropical storm-force winds associated with the event. A moderate risk of winds ≥ 39 mph (34 knots).	**Moderate Wind Risk…**based on the current wind speed forecast and inherent forecast uncertainties, there is a moderate risk of strong tropical storm-force winds associated with the event. A moderate risk of winds ≥ 58 mph (50 knots).	**Moderate Wind Risk…**based on the current wind speed forecast and inherent forecast uncertainties, there is a moderate risk of hurricane-force winds associated with the event. A moderate risk of winds ≥ 74 mph (64 knots).
Low Wind Risk…based on the current wind speed forecast and inherent forecast uncertainties, there is a low risk of tropical storm-force winds associated with the event. A low risk of winds ≥ 39 mph (34 knots).	**Low Wind Risk…**based on the current wind speed forecast and inherent forecast uncertainties, there is a low risk of strong tropical storm-force winds associated with the event. A low risk of winds ≥ 58 mph (50 knots).	**Low Wind Risk…**based on the current wind speed forecast and inherent forecast uncertainties, there is a low risk of hurricane-force winds associated with the event. A low risk of winds ≥ 74 mph (64 knots).
No Wind Risk…based on the current wind speed forecast and inherent forecast uncertainties, there is no discernible risk of tropical storm-force winds associated with the event. The risk of winds ≥ 39 mph (34 knots) is negligible.	**No Wind Risk…**based on the current wind speed forecast and inherent forecast uncertainties, there is no discernible risk of strong tropical storm-force winds associated with the event. The risk of winds ≥ 58 mph (50 knots) is negligible.	**No Wind Risk…**based on the current wind speed forecast and inherent forecast uncertainties, there is no discernible risk of hurricane-force winds associated with the event. The risk of winds ≥ 74 mph (64 knots) is negligible.

Note: The example images depict the wind risk associated with Hurricane Charley (2004) as expressed within 24 hours of landfall in west central Florida and its subsequent forecast track across east central Florida. Each risk category (Low, Moderate, and High) is defined by the probability of experiencing sustained winds (not gusts) of the corresponding magnitude or greater, but not accounting for local effects. Wind risk maps are based on the official forecast from the Tropical Prediction Center, accounting for inherent forecast uncertainties in the track, intensity, and size of Charley. For user convenience, the maps are generated at the local scale.